

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows.

1-63. (Canceled).

64. (New) A method of fabricating a medical lead, comprising:

providing a body member having a wall, a proximal end portion, and a distal end portion, and having a first conductor and a second conductor embedded within the wall and extending between the proximal end portion and the distal end portion, the first and second conductors each spaced about the same distance from a longitudinal axis of the body member;

forming a first opening in the wall in the distal end portion leading to the first conductor;

forming a second opening in the wall in the distal end portion leading to the first conductor;

forming a third opening in the wall in the distal end portion leading to the second conductor;

forming a first conductive link in the first opening electrically connected to the first conductor;

forming a second conductive link in the second opening electrically connected to the first conductor;

forming a third conductive link in the third opening electrically connected to the second conductor;

electrically connecting a first electrode, positioned at the distal end portion and proximate to the outer surface of the body member, to the first and second conductive links; and

electrically connecting a second electrode, positioned at the distal end portion and proximate to the outer surface of the body member, to the third conductive link.

65. (New) The method in accordance with Claim 64, wherein a one of the steps of forming a first, second and third conductive links further comprises a one of applying a conductive epoxy in the associated opening to form the conductive link and electroplating metal in the associated opening to form the conductive link.

66. (New) The method in accordance with Claim 65, wherein electroplating metal in the associated opening further comprises:

connecting the associated conductor at a proximal end thereof to a DC voltage source;
and

submerging at least the associated opening in a plating bath comprising ions of a selected metal.

67. (New) The method in accordance with Claim 66 wherein the selected metal comprises metal selected from a group consisting of gold, silver, platinum, platinum-iridium, and titanium.

68. (New) The method in accordance with Claim 64, wherein providing a body member having a wall and first and second conductors embedded within the wall further comprises:
- wrapping the first and second conductors about the body member in spiral relation; and
- embedding the first and second conductors in the wall of the body member.
69. (New) The method in accordance with Claim 68, wherein the first and second conductors are wrapped under tension and embedding the first and second conductors further comprises heating the body member.
70. (New) The method in accordance with Claim 68, wherein providing a body member further comprises extruding a tubular body member having an inner lumen.
71. (New) The method in accordance with Claim 64, wherein a one of the first, second and third openings is formed by laser etching.
72. (New) The method in accordance with Claim 64, wherein a one of the steps of electrically connecting a first electrode and electrically connecting a second electrode further comprises depositing a thin film electrode.
73. (New) The method in accordance with Claim 72, wherein the step of depositing further comprises depositing a first layer and depositing a second layer.

74. (New) The method in accordance with Claim 64, further comprising forming a connector on the proximal end portion of the body member, wherein the connector is electrically connected to the first conductor.

75. (New) A method of fabricating a medical lead, comprising:

providing a lead body having an insulator and a first conductor and a second conductor embedded within the insulator, the first conductor and the second conductor spaced about the same distance from a longitudinal axis of the lead body;

forming a first plurality of tunnel regions in the insulator to expose a plurality of portions of the first conductor;

forming a second plurality of tunnel regions in the insulator to expose a plurality of portions of the second conductor;

forming a first plurality of conductive links, each of the first plurality of conductive links formed in a corresponding one of the first plurality of tunnel regions, wherein each of the first plurality of conductive links is electrically connected to the first conductor;

forming a second plurality of conductive links, each of the second plurality of conductive links formed in a corresponding one of the second plurality of tunnel regions, wherein each of the second plurality of conductive links is electrically connected to the second conductor;

forming a first conductive band about the lead body, the first conductive band electrically connected to the first plurality of conductive links; and

forming a second conductive band about the lead body, the second conductive band electrically connected to the second plurality of conductive links.

76. (New) The method in accordance with Claim 75, wherein a one of forming a first plurality of conductive links and forming a second plurality of conductive links further comprises applying a conductive epoxy in the associated plurality of tunnel regions to form the plurality of conductive links.

77. (New) The method in accordance with Claim 75, wherein a one of forming a first plurality of conductive links and forming a second plurality of conductive links further comprises electroplating metal in the associated plurality of tunnel regions to form the plurality of conductive links.

78. (New) The method in accordance with Claim 77, wherein the metal comprises metal selected from a group consisting of gold, silver, platinum, platinum-iridium, and titanium.

79. (New) The method in accordance with Claim 75, wherein providing a lead body further comprises:

spirally winding the first conductor and the second conductor about the insulator; and
submerging the first conductor and the second conductor within the insulator.

80. (New) The method in accordance with Claim 75, wherein providing a lead body further comprises extruding an elongated lead body having an annular wall defining a lumen.

81. (New) The method in accordance with Claim 75, wherein a one of forming a first plurality of tunnel regions and forming a second plurality of tunnel regions further comprises burning through selected corresponding portions of the insulator with a laser beam to form the plurality of tunnel regions.

82. (New) The method in accordance with Claim 75, wherein a one of forming a first conductive band and forming a second conductive band comprises depositing a thin film electrode onto an outer surface of the lead body.

83. (New) A method of fabricating a medical lead, comprising:
providing an elongate body member having a proximate end portion, a distal end portion,
and an annular wall defining a lumen;
embedding a first conductor and a second conductor in the wall; and
at a one of the proximal end portion and the distal end portion of the body member,
forming first and second conductive links extending through the wall, the first and
second conductive links electrically connected to the first conductor,
forming third and fourth conductive links extending through the wall, the third
and fourth conductive links electrically connected to the second conductor,

electrically connecting a first electrode to the first and second conductive links,
and
electrically connecting a second electrode to the third and fourth conductive links.

84. (New) The method in accordance with Claim 83, wherein providing an elongate body member further comprises extruding a body member comprising flexible plastic material.

85. (New) The method in accordance with Claim 83, wherein embedding a first conductor and a second conductor further comprises:

winding the first and second conductors spirally about the wall under tension;
heating the body member to submerge the first and second conductors in the wall; and
smoothing the wall to remove deformations.

86. (New) The method in accordance with Claim 83, wherein forming first and second conductive links further comprises:

laser etching first and second channels in the wall, exposing first and second portions of the first conductor; and
forming the first and second conductive links in the first and second channels.

87. (New) The method in accordance with Claim 86, wherein forming the first and second conductive links in the first and second channels further comprises a one of electroplating metal in the first and second channels and applying conductive epoxy in the first and second channels.

88. (New) The method in accordance with Claim 83, wherein electrically connecting a first electrode further comprises depositing a thin film electrode on an outer surface of the body member.

89. (New) The method in accordance with Claim 83, wherein electrically connecting a first electrode further comprises:

positioning ring electrodes around the body member, in electrical contact with the first and second conductive links;

injection molding plastic material proximally and distally adjacent to the ring.

90. (New) A method of fabricating a medical lead, comprising:

extruding a body member having a proximate end portion, a distal end portion, and an annular wall defining a lumen;

winding a first conductor and a second conductor under tension spirally around the body member;

heating the body member to embed the conductors in the wall, wherein the first and second conductors are spaced about the same distance from a longitudinal axis of the body member;

laser etching a first opening and a second opening in the distal end portion of the body member to expose first and second portions of the first conductor;

laser etching a third opening in the distal end portion of the body member to expose a first portion of the second conductor;

forming a first conductive link in the first opening and a second conductive link in the second opening, the first and second conductive links electrically connected to the first conductor;

forming a third conductive link in the third opening electrically connected to the second conductor;

forming a first electrode electrically connected to the first and second conductive links;
and

forming a second electrode electrically connected to the third conductive link.

91. (New) A method for fabricating a neurostimulating lead comprising:

providing a body member having a wall, a proximal end portion and a distal end portion;
spirally winding a first conductor about the wall of the body member and extending between the proximal end portion and the distal end portion;

spirally winding a second conductor about the wall of the body member and extending between the proximal end portion and the distal end portion, and wherein the first conductor and the second conductor are each spaced about the same radial distance from a center axis of the body member;

forming a first opening in the wall in the distal end portion leading to the first conductor;

forming a second opening in the wall in the distal end portion leading to the first conductor;

forming a third opening in the wall in the distal end portion leading to the second conductor;

forming a first conductive link within the first opening to electrically connect to the first conductor;

forming a second conductive link within the second opening to electrically connect to the first conductor;

forming a third conductive link within the third opening to electrically connect to the second conductor;

electrically connecting a first band electrode, positioned at the distal end portion and proximate the outer surface of the body member, to the first conductive link and to the second conductive link; and

electrically connecting a second band electrode, positioned at the distal end portion proximate the outer surface of the body member, to the third conductive link.